

## **REMARKS**

Claims 1-50 are currently pending. In the April 21, 2005, Office Action, the Examiner rejected claims 35-39 and 41-43 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,751,735 to Schell et al. (hereinafter “Schell”). In addition, claims 1, 3, 4, 6-9, 12, 13, 15, 16, 18-20, 23, 24, 26, 27, 29-31, 34, 40 and 44-50 were rejected under 35 U.S.C. § 103(a) as obvious over Schell in view of Balfanz et al. “A Security Infrastructure for Distributed Java Applications,” 2000 IEEE Symposium on Security and Privacy (May 2000) (hereinafter “Balfanz”). Finally, the remaining pending claims were rejected under 35 U.S.C. § 103(a) as unpatentable over Schell in view of Balfanz (as applied to claims 1, 13, 24) and further in view of U.S. Publication No. 2001/0001877 to French et al. (hereinafter “French”). Applicants have amended selected claims for clarification purposes, including claim amendments that are unrelated to the pending Office Action. Applicants respectfully traverse the rejections for the reasons set forth hereinbelow.

### **A. General Remarks Concerning This Response**

As a preliminary matter, Applicants respectfully submit that the April 21, 2005 Office Action improperly entered a final rejection over the newly cited Schell, Balfanz and French references. None of these references was used in the first Office Action dated July 1, 2004. Instead, the first Office Action relied only on U.S. Patent No. 6,598,167 to Devine et al. to reject the claims as anticipated. Applicant overcame the rejection of the first Office Action by pointing to deficiencies in the rejection analysis, and included only minor changes to some of the claims in order to correct certain claim informalities noted by the Examiner. Indeed, most of the claims were not amended at all, so it was improper for the Examiner to finally reject the claims based on the assertion that “Applicant has changed the scope of the invention in view of the amended claims.” Final Office Action, p. 2 (April 15, 2005). Accordingly, Applicants request a full and fair consideration of the pending application and arguments presented herein.

### **B. Figures 3 and 4 Have Been Corrected To Overcome Objections As Required**

In the Final Office Action, the Examiner objected to certain informalities in Figures 3 and 4. In response to the objection to Figure 3, Applicants submit herewith a Replacement drawing sheet for Figure 3 to include reference numerals 300 and 312 in accordance with the originally

submitted description, and in addition have amended the specification to change the reference numeral “330” to reference numeral “380” in accordance with the originally submitted Figure 3. In further response, Applicants submit that the reference numeral “322” referenced by the Examiner was actually reference numeral 312 that refers to the block labeled “PKCS10Server Bean,” and the correction submitted herewith should make this clear.

As for the objection to Figure 4, Applicants submit herewith a Replacement drawing sheet for Figure 4 to include reference numeral 400 in accordance with the originally submitted description, and have also amended the specification to include a reference to numeral 446 which is depicted in Figure 4 as referring to an IfThenElse bean for a first certificate authority CA1. Accordingly, Applicants respectfully request that the drawing objections be withdrawn and that the drawings be approved.

**C. Claims 35-39 and 41-43 Are Not Anticipated by Schell**

In response to the Examiner’s rejection of claims 35-39 and 41-43 as being anticipated by Schell, Applicants respectfully request reconsideration and withdrawal of the rejection because Schell’s disclosure of a certificate hierarchy protocol for use by separate entities does not anticipate the present invention’s scheme for using event-responsive software module building blocks to implement a public key infrastructure so that at least one module acts as a “pipe” to propagate an event to a plurality of the modules. *See, e.g.*, claim 35.

In particular, the invention recited in claims 35-39 and 41-43 is directed to a particular software architecture comprising beans that respond to propagated events for implementing functionality related to public key infrastructure, including a pipe bean that propagates an event to other beans. However, the claim rejections completely ignore the specific language in the claims that recite these software architectural features. For example, the first element of independent claim 35 reads as follows:

a plurality of beans, the beans communicatively coupled to one another and responsive to events generated by the plurality of beans;

The rejection of independent claim 35 states that this feature is found in Schell at column 9, lines 9-30, and Figure 5-6. Final Office Action, p. 4. Applicants strongly disagree that Schell discloses the claimed features, since the cited disclosure from Schell refers only to a hierarchical linking mechanism for limiting access to modules, and does not disclose or suggest that any particular module may respond to events generated by the plurality of modules.

The claim rejections also ignore the specifically recited requirements of the second element of independent claim 35, which reads as follows:

at least one of the plurality of beans comprising a pipe bean that propagates an event to another of the plurality of beans....

While Applicants have closely reviewed the passages (col. 19, lines 1-10 and 50-67) from Schell which the Examiner cites to show “a CMC signature root that propagates events to another of the plurality of the modules,” Applicants are simply not able to identify any disclosure in the cited Schell passages suggesting that the CMC signature root 152b is an event-responsive module (or bean) that propagates an event to a plurality of event-responsive modules or beans as claimed.

As a preliminary matter, Schell does not disclose using building block modules where each module responds to an “event” by performing a simple operation on an incoming request. And rather than describing event propagation from a pipe module (or bean) to a plurality of event-responsive modules (or beans), Schell discloses a conventional certificate scheme whereby separate entities are generating and verifying different certificates. Indeed, the passage cited by the Examiner states that “[a]ny subsequent entity, receiving a certificate 154 cascading from the CMC signature root 152b as a certifying authority, may verify the certificate 154.” Schell Patent, col. 19, lines 58-60. This is also confirmed by Schell Figure 5 – which is referenced by the passages cited by the Examiner -- which illustrates how separate entities (e.g., a certification authority 152a, certificate holders 152b, 152c, 152d, 152e) are used to implement a certificate hierarchy. In addition, Schell states that:

When discussing authorities, holders, receivers, and the like, it is important to realize that such an authority, holder, sender, receiver, or the like may actually be a hardware device, or a software operation being executed by a hardware device. Any hardware device, operating software, or data structure in a memory device may be owned, controlled, operated, or otherwise associated with an individual or an entity. Nevertheless, insofar as the invention is concerned, names of such entities may be used to represent the hardware, software, data structures, and the like controlled or otherwise associated with such entities.

Schell Patent, col. 15, lines 50-60. In this respect, Schell typifies the prior art with its description of the CMC Signature Root 152b as being a certification authority. *See*, Schell, col. 17, lines 59-67. In short, Schell in no way suggests Applicants’ invention for coupling individual software module building blocks (or beans) that are responsive to particular events. Nor does Schell disclose that the recited plurality of beans includes an event-responsive pipe bean that propagates

an event to other event-responsive modules (or beans) that take the event and perform some other operation in the defined process. Accordingly, Applicants respectfully request that the anticipation rejection of claims 35-39 and 41-43 be withdrawn and that the claims be allowed.

**D. Claims 1, 3, 4, 6-9, 12, 13, 15, 16, 18-20, 23, 24, 26, 27, 29-31, 34, 40 and 44-50 Are Not Obvious Over Schell In View of Balfanz**

In response to the Examiner's rejection of claims 1, 3, 4, 6-9, 12, 13, 15, 16, 18-20, 23, 24, 26, 27, 29-31, 34, 40 and 44-50 as being obvious over Schell in view of Balfanz, Applicants respectfully request reconsideration and withdrawal of the rejection because Schell's disclosure of a CMC signature root does not disclose or suggest the requirement of a reception module (or bean) that generates an event object (or reception event object) in response to receiving a request to generate a digital certificate as recited in these claims (by virtue of their respective recited dependencies).

In particular, the invention recited in independent claims 1, 13 and 24 (and the associated dependent claims) is directed to a particular software architecture for implementing functionality relating to digital certificates by using a reception bean that responds to a request to generate a digital certificate from the distributed processing system by generating a reception event object that is propagated to request implementation software. However, the claim rejections completely ignore the specific language in the claims that recite these software architectural features. For example, the second element of amended claim 1 reads as follows:

at least one reception bean, communicatively coupled to the request implementation software and the distributed processing system, that generates an event object in response to receiving the request to generate a digital certificate from the distributed processing system.

The rejection of independent claims 1, 13 and 24 states that the recited "reception bean" feature is found in Schell at column 19, lines 51-57. Final Office Action, pp. 7, 8. Applicants strongly disagree that Schell discloses the claimed features, since the cited disclosure from Schell refers only to an authorization scheme whereby the CMC signature root 152b is a *separate entity* who is a certificate holder having limited authorization to create private/public key pairs, and does not disclose or suggest that any particular reception module that generates an event object in response to a request to generate a digital certificate. Thus, rather than disclosing the use of building block modules (or beans) that respond to a request to generate a digital certificate by generating an event object (as variously recited in claims 1-34), Schell instead describes a

conventional certification scheme whereby a distinct authority entity (e.g., CMC Signature Root 152b) certifies or provides a signing operation (e.g., 166d) for a certificate (e.g., 154d) for a separate holder entity (e.g., 152d). *See*, Schell Patent, col. 18, line 66 to col. 19, line 3. And rather than describing a reception module (or bean) that responds to an event generated by other modules (or beans) by performing a simple operation on the request (as variously recited in claims 40 and 44-50), Schell discloses a conventional certificate scheme whereby separate entities are generating and verifying different certificates. *See*, Schell Patent, col. 19, lines 58-60. Finally, Schell nowhere discloses coupling a plurality of modules (or beans) responsive to events that are generated by the plurality of modules (or beans) and that are subclassing from a base class event (as variously recited in claims 44-50).

The foregoing deficiencies in the Schell disclosure are not remedied by Balfanz,<sup>1</sup> which the Examiner cites only for the disclosure of the “object-oriented language” claim requirements. Since neither Schell nor Balfanz discloses or suggests a “reception bean” to generate event objects in response to a request to generate a digital certificate from the distributed processing system (as variously recited in claims 1-34) or a “plurality of beans” that are responsive to events generated by other beans (as variously recited in claims 35-50), Applicants need not address the Examiner’s improper use of hindsight reconstruction here or the lack of “motivation to combine” evidence since the combination of references does not meet the claim requirements, even if they were properly combined. Accordingly, Applicants respectfully request that the rejections of claims 1, 3, 4, 6-9, 12, 13, 15, 16, 18-20, 23, 24, 26, 27, 29-31, 34, 40 and 44-50 be withdrawn and that the claims be allowed.

**E. Claims 2, 5, 10, 11, 14, 17, 21, 22, 25, 28, 32 and 33 Are Not Obvious Over Schell In View of Balfanz and French**

In response to the Examiner’s rejection of claims 2, 5, 10, 11, 14, 17, 21, 22, 25, 28, 32 and 33 as being obvious over Schell in view of Balfanz and French, Applicants respectfully request reconsideration and withdrawal of the rejection because none of the references, alone or in combination, discloses or suggests a “reception bean” to generate event objects in response to a request to generate a digital certificate from the distributed processing system (as variously

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<sup>1</sup> Applicants respectfully submit that the Balfanz disclosure does not qualify as prior art to the present invention, and hereby reserve the right to demonstrate prior conception and diligent reduction to practice to predate the presumptive May 2000 publication date of the Balfanz article.

recited in claims 1-34) or a “plurality of beans” that are responsive to events generated by other beans (as variously recited in claims 35-50), as discussed hereinabove. To the extent that the additional requirements of dependent claims 2, 5, 10, 11, 14, 17, 21, 22, 25, 28, 32 and 33 are admitted to be missing from the disclosures of Schell and Balfanz, and are only remedied by the selective combination of the Schell, Balfanz and French references, Applicants submit that the Examiner has engaged in improper hindsight reconstruction by using the Applicants’ invention to selectively pick and choose from the cited art.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Where a rejection is based on the assertion that all claim limitations are found in a number of prior art references, the fact finder must determine “[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references.” In re Fulton, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004). The motivation-to-combine inquiry “prevent[s] statutorily proscribed hindsight reasoning when determining the obviousness of an invention.” Alza Corp. v. Mylan Labs., Inc., No. 06-1019 (Fed. Cir. Sept. 6, 2006). Thus, in the absence of any *explicit* suggestion in the Schell, Balfanz and French references that they should be combined, the Examiner must show that an *implicit* suggestion to combine these references may be found in the “common knowledge, the prior art as a whole, or the nature of the problem itself.” Dystar Textilfarben GMBH v. C.H. Patrick Co., No. 06-1088, pp. 7-8 (Fed. Cir. 2006). When a motivation to combine is not explicitly taught by the prior art references, the “evidence” of motive may be provided as an explanation of the well-known principle or problem-solving strategy to be applied, but in any event *requires* some evidence of any common knowledge and common sense, above and beyond mere assumption. Id., pp. 17-20.

As a preliminary matter, a *prima facie* case of obviousness has not been established since none of the cited references discloses using one or more “beans” that respond to an “event” or a “request to generate a digital certificate.” As for the additional requirements recited in dependent claims 2, 5, 10, 11, 14, 17, 21, 22, 25, 28, 32 and 33 that the Examiner concedes are missing from Schell and Balfanz, the Examiner invokes French to meet the missing requirements. Final Office Action, pp. 12-14. However, in the absence of any proper evidence that persons skilled in the art would be motivated to combine the references, this appears to be a

textbook example of hindsight reconstruction. Obviousness cannot be established by hindsight combination to produce the claimed invention. In re Gorman, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). In short, the Examiner has not made a *prima facie* case that the combination of Schell, Balfanz and French were suggested by the prior art, common knowledge, or the nature of the problem, viewed through the eyes of an ordinary artisan, but has instead improperly relied upon Applicants' disclosure to reconstruct the prior art. Accordingly, Applicants respectfully request that the obviousness rejection of claims 2, 5, 10, 11, 14, 17, 21, 22, 25, 28, 32 and 33 be withdrawn and that the claims be allowed.

### **CONCLUSION**

In view of the amendments and remarks set forth herein, Applicants respectfully submit that all pending claims are in condition for allowance and request that a Notice of Allowance be issued. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned at 512-338-9100.

ELECTRONICALLY FILED  
January 8, 2006

Respectfully submitted,

*/Michael Rocco Cannatti/*

Michael Rocco Cannatti  
Attorney for Applicants  
Reg. No. 34,791